SEQUENCE LISTING

<110> Mahajan, Pramod B.
Zuo, Zhunng

<120> Poly ADP-Ribose Polymerase Gene and Its Uses

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Glu	Lys	Ile	Arg	Asn 85	Tyr	Val	Gly	Ser	Ala 90	Ser	Ala	Gly	Thr	Ser 95	Ser	
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Thr	Ala	Ala	Pro 100	Pro	Glu	ьуs	Cys	105	шe	GIU	ire	MIG	110	Set	AIG	
cgt Arg		tca														384
Arg	Thr	115	Cys	AIG	Arg	Cys	120	GIU	шуз	110		125	O.J			
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ALG	130	501	1110	2,0	200	135			2		140	-				
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		Ala														
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4. 

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tgt Cys	gg! Gl:	t gaq y Glu 43!	ı Leı	gao 1 Asi	aat Asr	gaa Glu	a aat 1 Asr 440	ı Ala	gaa Glu	gto 1 Val	agç Arç	jaaa jLys 445	Ala	agç Arç	g agg g Arg	1344
cto	g aad 1 Ly: 45	s Il	a cca	a att	t gta	a agg	g Gl	g ggt u Gly	tak Ty	c att	gga Gly 460	/ Glu	a tgi ı Cy:	gtt Val	aaa l Lys	1392

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Cys Ser Xaa Ser Pro Xaa Val Cys Lys Asn Thr Ala His Ile Pro Xaa 500 505 510  gra tgg gaa aag cat ata caa tgc amc ctt aaa cat gtt ctg acc tgn Xaa Trp Glu Lys His Ile Gln Cys Xaa Leu Lys His Val Leu Thr Xaa 515 520 525  cac nag gtg tgy aca ggc tac tat gta ctc cag atc att gaa cag gat His Xaa Val Xaa Thr Gly Tyr Tyr Val Leu Gln Ile Ile Glu Gln Asp 530 535 535 540  gat ggg tct gag tgc tac gta ttt cgt aag tgg gga cgg gtt ggg agt Asp Gly Ser Glu Cys Tyr Val Phe Arg Lys Trp Gly Arg Val Gly Ser 545 550 550 555 560  gag aaa att gga ggg caa aaa ctg gag gag atg tca aaa act gag gca Glu Lys Ile Gly Gly Gln Lys Leu Glu Glu Met Ser Lys Thr Glu Ala 575  atc aag gaa ttc aaa aga tta ttt ctt gag aag act gga aac tca tgg Ile Lys Glu Phe Lys Arg Leu Phe Leu Glu Lys Thr Gly Asn Ser Trp 580 585 590  gaa gct tgg gaa tgt aaa acc aat ttt cgg aag cag cct ggg aga ttt Glu Ala Trp Glu Cys Lys Thr Asn Phe Arg Lys Gln Pro Gly Arg Phe 595 600  tac cca ctt gat gtt gat tat ggt gt aag aaa gca cca aaa cgg aaa 1872  try Pro Leu Asp Val Asp Tyr Gly Val Lys Lys Ala Pro Lys Arg Lys 610 615 620  gat atc agt gaa atg aaa agt tct ctt gct cct caa ttg cta gaa ctc Asp Ile Ser Glu Met Lys Ser Ser Leu Ala Pro Gln Leu Leu Glu Leu 625 630 640  atg aag atg ctt ttc aat gtg gag aca tat aga gct gct atg atg gaa Met Lys Met Leu Phe Asn Val Glu Thr Tyr Arg Ala Ala Met Met Glu	tcc Ser	tca Ser	aaa Lys	ggc Gly	Xaa	act Thr	gtc Val	act Thr	gtt Val	Lys	gtt Val	aag Lys	ggc Gly	cga Arg	Ser	gct Ala	1488
Xaa Trp Glu Lys His Ile Gln Cys Xaa Leu Lys His Val Leu Thr Xaa       515       520       525         cac nag gtg tgy aca ggc tac tat gta ctc cag at gat Gln Ile Glu Gln Asp 530       1632         gat ggg tct gag tgc tac gta ttt cgt aag tggg ggc ggg gtt ggg agt 530       530       540         gat ggg tct gag tgc tac gta ttt cgt aag tgg gga cgg gtt ggg agt Asp Gly Ser Glu Cys Tyr Val Phe Arg Lys Trp Gly Arg Val Gly Ser 545       550       560         gag aaa att gga ggg caa aaa ctg gag gag atg tca aaa act gag gca Glu Lys Ile Gly Gly Gln Lys Leu Glu Glu Met Ser Lys Thr Glu Ala 570       575       1728         atc aag gaa ttc aaa aga tta ttt ctt gag aag act gga aac tca tgg Ile Lys Glu Phe Lys Arg Leu Phe Leu Glu Lys Thr Gly Asn Ser Trp 580       585       590         gaa gct tgg gaa tgt aaa acc aat ttt cgg aag cag cct ggg aqa ttt Glu Ala Trp Glu Cys Lys Thr Asn Phe Arg Lys Gln Pro Gly Arg Phe 595       1824         Glu Ala Trp Glu Cys Lys Thr Asn Phe Arg Lys Gln Pro Gly Arg Phe 610       615       620         tac cca ctt gat gtt gat tat ggt gtt aag aaa gca cca aaa cgg aaa 1872       1872         Tyr Pro Leu Asp Val Asp Tyr Gly Val Lys Lys Ala Pro Lys Arg Lys 610       615       620         gat atc agt gaa atg aaa agt tct ctt gct cct caa ttg cta gaa ctc Asp Ile Ser Glu Met Lys Ser Ser Leu Ala Pro Gln Leu Leu Glu Leu 625       1920         atg aag atg ctt ttc aat gtg gag aca tat agg gct gct atg atg gaa 1968       1968         Met Lys Met Leu Phe Asn Val Glu Thr Tyr Arg Ala Ala Met Met Glu	tgt Cys	tca Ser	tya Xaa	Ser	cct Pro	cyg Xaa	gtt Val	tgc Cys	Lys	aat Asn	act Thr	gct Ala	cac His	Ile	cct Pro	tra Xaa	1536
### ### ### ### ### ### ### ### ### ##	gra Xaa	tgg Trp	Glu	Lys	cat His	ata Ile	caa Gln	Cys	amc Xaa	ctt Leu	aaa Lys	cat His	Val	ctg Leu	acc Thr	tgn Xaa	1584
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Tyr Pro Leu Asp Val Asp Tyr Gly Val Lys Lys Ala Pro Lys Arg Lys 610 615 620  gat atc agt gaa atg aaa agt tct ctt gct cct caa ttg cta gaa ctc Asp Ile Ser Glu Met Lys Ser Ser Leu Ala Pro Gln Leu Leu Glu Leu 625 630 635 640  atg aag atg ctt ttc aat gtg gag aca tat aga gct gct atg atg gaa Met Lys Met Leu Phe Asn Val Glu Thr Tyr Arg Ala Ala Met Met Glu	gaa Glu	a gc	a Tr	p Gl	a tgi	aaa s Lys	a acc	. Asr	Phe	cgq	g aaq g Ly:	g cad	n Pro	Gly	aga Arq	a ttt g Phe	1824
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	at Me	g aa t Ly	g at s Me	g ct et Le	u Ph	e As	t gt n Va	g ga	g ac u Th	r Ty	r Ar	a gc g Al	t gc a Al	t ato	t Me	t Glu	1968

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865					0,0											
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Ser			e val	. Lys	Trp	935		, nar	, , ,		940	)		-	-	
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Ser Lys Arg Lys Lys Ser Glu Asn Asp Ile Asp Ser Tyr Lys Ser Ala 195 200 205

Arg Leu Asp Glu Ser Thr Ser Glu Gly Thr Val Arg Asn Lys Gly Gln 210 215 220

Leu Val Asp Pro Arg Gly Ser Asn Thr Ser Ser Ala Asp Ile Gln Leu 225 230 230 235

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- His Xaa Val Xaa Thr Gly Tyr Tyr Val Leu Gln Ile Ile Glu Gln Asp

530 535 540

Asp Gly Ser Glu Cys Tyr Val Phe Arg Lys Trp Gly Arg Val Gly Ser 545 550 555

Glu Lys Ile Gly Gly Gln Lys Leu Glu Glu Met Ser Lys Thr Glu Ala

Ile Lys Glu Phe Lys Arg Leu Phe Leu Glu Lys Thr Gly Asn Ser Trp \$580\$

Glu Ala Trp Glu Cys Lys Thr Asn Phe Arg Lys Gln Pro Gly Arg Phe 595 600 605

Tyr Pro Leu Asp Val Asp Tyr Gly Val Lys Lys Ala Pro Lys Arg Lys 610 620

Asp Ile Ser Glu Met Lys Ser Ser Leu Ala Pro Gln Leu Leu Glu Leu 625 630 635 640

Met Lys Met Leu Phe Asn Val Glu Thr Tyr Arg Ala Ala Met Met Glu 645  $\,$  650  $\,$  655

Phe Glu Xaa Asn Met Ser Glu Met Pro Leu Gly Lys Leu Ser Xaa Xaa 660 670

Asn Ile Glu Xaa Gly Phe Glu Ala Leu Thr Xaa Xaa Xaa Xaa Leu Phe 675 680 685

Glu Gly His Arg Xaa Ser Ser Thr Gly Leu Xaa Glu Lys Ala Xaa Leu 690 695 700

Leu Xaa Xaa Xaa Xaa Xaa Phe Ser Leu Leu Ser Leu Leu Phe Ile Leu 705 710 715 720

Ile Leu Tyr Gly Met Arg Met Ile Ser Tyr Ser Lys Ala Lys Met Leu 725 730 735

Glu Ala Leu Gin Asp Ile Glu Ile Ala Ser Lys Ile Val Gly Phe Asp \$740\$ \$750\$

Ser Asp Ser Asp Glu Ser Leu Asp Asp Lys Tyr Met Lys Leu His Cys 755 760 765

Asp Ile Thr Pro Leu Ala His Asp Ser Glu Asp Tyr Lys Leu Ile Glu 770 775 780

Gln Tyr Leu Leu Asn Thr His Ala Pro Thr His Lys Asp Trp Ser Leu

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Glu Leu Glu Glu Val Phe Ser Leu Asp Arg Asp Gly Glu Leu Asn Lys \$805\$

Tyr Ser Arg Tyr Lys Asn Asn Leu His Asn Lys Met Leu Leu Trp His 820 825

Gly Ser Arg Leu Thr Asn Phe Val Gly Ile Leu Ser Gln Gly Leu Arg 835 \$840\$

Ile Ala Pro Pro Glu Ala Pro Val Thr Gly Tyr Met Phe Gly Lys Gly 850 855 860

Leu Tyr Phe Ala Asp Leu Val Ser Lys Ser Ala Gln Tyr Cys Tyr Val 865 870 875

Asp Arg Asn Asn Pro Val Gly Leu Met Leu Leu Ser Glu Val Ala Leu 885 890

Gly Asp Met Tyr Glu Leu Lys Lys Ala Thr Ser Met Asp Lys Pro Pro 900 905 910

Arg Gly Lys His Ser Thr Lys Gly Leu Gly Lys Thr Val Pro Leu Glu 915 920 925

Ser Glu Phe Val Lys Trp Arg Asp Asp Val Val Pro Cys Gly Lys 930 935 940

Pro Val Pro Ser Ser Ile Arg Ser Ser Glu Leu Met Tyr Asn Glu Tyr 945 950 955 960

Ile Val Tyr Asn Thr Ser Gln Val Lys Met Gln Phe Leu Leu Lys Val 965 970 970

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Asn	Lys	Met	Leu		Trp	His	GIĀ	Ser	Arg 10	Leu	ini	ASII	FIIC	15	013	
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att	LOU	car	Gln	Glv	Leu	Ara	Ile	Ala	Pro	Pro	Glu	Ala	Pro	Val	Thr	
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aac	tat	atq	ttc	ggc	aaa	ggc	ctc	tac	ttt	gca	gat	cta	gta	agc	aag	144
Gly	Tyr	Met	Phe	Gly	Lys	Gly	Leu	Tyr	Phe	Ala	Asp	Leu	Val	Ser	Lys	
_		35					40					45				
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agc	gca	caa	tac	tgt	tat	gtg	gat	a gg	aat	aat	cct	gta	ggt	LLG	Mot	1,72
Ser		Gln	Tyr	Cys	Tyr		Asp	Arg	Asn	Asn	60	Val	GIY	Беа	1100	
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ctt	CLL	tot	Glu	y t t	Ala	Len	Glv	Asp	Met	Tyr	Glu	Leu	Lys	Lys	Ala	
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Thr	Ser	Met	Asp	Lys	Pro	Pro	Arg	Gly	Lys	His	Ser	Thr	Lys	Gly	Leu	
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Gly	/ Lys	Thr			Leu	Glu	Ser	105		· vai	ьуз	ıııp	110	LIST	Asp	
			100	)				103								
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gu	: gre	val.	. CCI	n Cvs	Glv	Lvs	Pro	Val	Pro	Ser	Ser	Ile	Arg	Sei	Ser	
val	L vai	115				-1	120					125	i			
qaa	a cto	ato	g ta	c aat	gag	tac	ato	gto	tac	aac	aca	a tcc	caç	g gt	g aag	432
Gl	ı Leı	ı Met	Ту	r Ası	n Glu	Туг	Ile	e Val	Туз	Ası	1 Th	r Ser	Glr	n Va.	l Lys	
	130					135					140	)				
																474
at	g ca	g tto	c tt	g ct	gaaq	gt	g cg1	t tto	c cat	t cad	c aa	g ago	g taq	3		4 / 4
Me	t Gl	n Phe	e Le	u Le	u Lys		L Ar	g Phe	e Hi:			s Arc	3			
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Ser Ala Gln Tyr Cys Tyr Val Asp Arg Asn Asn Pro Val Gly Leu Met 55 50

Leu Leu Ser Glu Val Ala Leu Gly Asp Met Tyr Glu Leu Lys Lys Ala 65

Thr Ser Met Asp Lys Pro Pro Arg Gly Lys His Ser Thr Lys Gly Leu 90 85

Gly Lys Thr Val Pro Leu Glu Ser Glu Phe Val Lys Trp Arg Asp Asp 105 100

Val Val Val Pro Cys Gly Lys Pro Val Pro Ser Ser Ile Arg Ser Ser 120 115

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